

GALVANIZED IRON.

Practise attention has been for a long time fixed upon this matter, waiting anxiously and with a large measure of expectation, the development and success of the process of galvanizing metals, meaning that upon it so much depended in a general commercial sense, for the restoration of health and activity in that great interest and district of our country connected with the Iron Trade, and upon which also many others so largely depend. It is not alone, however, in the merely commercial sense that it is to be viewed, but also in its influence upon art; in fact, it may be said to have its principal reliance in that direction, for it is under the auspices of the ascendant role of science that the discovery has been made, and all experience as well as reason shows, that art is consort in every period of the other's domination, applying, regulating, and distributing, and ordering all with the devoted or delegated trust of premiership.

Little indeed! we may venture to affirm, would have been the progress of this discovery, if it were to end in its mere application to complete and to give security to, the products of the past. If all the inventions and applications of iron up to this period were only now to be rendered by this process of galvanizing more permanent or more diffuse, little would be the amount of our gain; but it is calculated to open up new sources of invention, and new modes of application, compared with which our past workings have been little and insignificant.

In architecture, we will risk to say it, the consequences will be incalculable. What the stone quarry and the forest were before the dawn of that science which brought light into their regions of existence, under which light and its laws new life was given to them, and of which law art was the prime administrator,—what these were in that previous chaos, the Iron-mine is in this. A new world and a new people will spring up under the new regime.

Talk of the transmutation of metals and the ages of alchemy! we have surpassed the expectation of both, or rather we are in the advent of that which shall surpass them; this magnetic discovery through the roughest commerce, is as that of the earlier needle through infant navigation, and will be in consequence to the full as important.

Already is the movement beginning to be distinguished by the aggregation of active minds and men of master purpose. Our merchants and men of money are stepping out with cautious eagerness, ready to seize the advantages of early "ventures." Our learned societies are being agitated by the buzzing sounds of premonition, that species of recreation in science in which men appeared to indulge in respect of galvanic experiment is now passed by, and replaced with sober and serious industry, so it is discovered that it is not "all a jest." Art alone now remains to exercise her magic functions; her schools of design must be opened, her fountains of invention unsealed, the license, as it is called, of the poet, but in very truth the grace and charm of the soul and the spirit, is to be breathed into the inert mass, and iron now, as marble, and stone, and wood in times before, will reflect the life which transcends mortality, and give to the age on which we are entered its undying meed of renown—we will stamp it with the characteristics of originality and of greatness.

Whither the glance from the far vision of the Chanaan of promise, and confining it to this Egypt of our present bondage, to this tiling in the clay-field, to the making of bricks without straw, to which, and to a forty years' passage of the desert, we are doomed, come we to the practice of the day, to companies and communities engaged in the pioneer task of ushering forth these new inventions to the world. We have before us the prospectus of one, styling itself the Patent Galvanized Iron and Wire Rope Company; these have cut out for themselves the work of a quarter of a century, and that upon their *débris* shall be raised the most of that we have employed ourselves in sketching in of the picture. Let them go wisely to work, and there is a mine of profit for them. Let them get the best pay of pioneers, and their sixteen per cent. is certain. Let them complete their scheme, and its appliances, with all that judgment which the exertion may call for, and, like all

things of good appointment, their success is ensured. It is a junction of good elements, and under favourable auspices. Three interests are being consolidated to make one; and it really seems to be a union essential to the success of each,—the Iron and Coal Company of North Cumbria, in Glamorganshire, the several patentees of the galvanized iron, and the patentee of the wire rope. It would be idle in us to run over the ground of ruinism, either with reference to the interest represented in the first named, or to the particular working and merits of that individual concern. Of the second we have given our estimate in the preceding remarks; and of the third it has fallen in our way to speak several times in connection with Mr. Smith the inventor, whose lightning conductors, iron shutters, spring hinges, floor cramps, &c., have rendered his name familiar to builders. Nor can we go into a reprint of the prospectus, and without this the particular merits of the consolidation cannot be much farther set forth. It will suffice that in shipbuilding, for fastenings and sheathing, for bolts, mooring and chain cables, and for the accessories of boats, and floating breakwaters; for house building, in gables and in detail, particularly for roofing (covering as well as structure), for agricultural uses, and for the "munitions of war," there is an infinite suggestion of utilities—and, to sum up all, insurance, in the true sense of the word, against fire and decay.

GYPSOGRAPHY.

The great demand for pictorial illustration to books and other publications within a few late years, and the difficulty and expense of obtaining the only description of engravings which will print conjointly with type in the method of surface or common letterpress printing, has induced several enterprising individuals to endeavour to produce an intermediate description of engraving, to unite as far as possible the cheapness of printing from the surface as in the case of wood engravings, and the very many advantages of copper or steel-plate engravings, which are uniformly printed at the roller press from incised lines in the plate, at once a tedious and expensive method, and which is apparently totally denied that rapidity of production which is evidently the great desideratum of the art of printing at the present day. To this end the subject of our present notice, the art of engraving on plaster, or, as it is termed, gypsography or metallic relief engraving, appears eminently to combine the above-named advantages of being at once simple in its execution, certain in its effect, and very much below the usual charges of any other method of engraving (lithography not even excepted, where long numbers are required). As we must not suppose that all our readers are acquainted with the various methods of engraving, it may not be uninteresting to some to give a short explanation of the different methods.

In copper-plate engraving the lines to produce the picture or engraving are cut more or less deep into the copper or steel when it is printed from the plate, is thickly linked all over, and then cleaned off by the hand of the printer over a chemical fire, the incisions or graver cuts retaining a sufficiency of ink to produce a print; it is then, with paper on its surface, passed through a powerful roller-press, the pressure forcing out the ink from the interstices to the face of the paper. It will be seen that this is a most tedious method of printing, whereas surface or type-press printing is (the lines or figures to be reproduced standing in relief) extraordinarily rapid and easy in its execution.

In engravings on wood, the artist has in the first place to make his drawing on the wooden block, and the wood engraver carefully removes all parts of the wood untouched by his pencil; very often through the extreme care, and sometimes through the inability to follow the off-hand style of the artist, the engraver totally fails in producing the effect desired by the designer in the first-mentioned instance, producing a stiff and formal delineation of the artist's original idea, and in the second a total misrepresentation of the original sketch. These stringent remarks will not apply to those eminent artists (for artists they are as well as

wood engravers), Messrs. Thompson, Jackson, Landells, S. Williams, Linton, Clennell, &c. &c., &c., through whose beautiful productions the present uncensured call for illustrated works has arisen; but these latter can only be employed on costly works to afford them a sufficiently remunerating price for their labour. The difficulty of preserving the original drawing of the artist is by gypsography completely removed, for by this method the artist is his own engraver, and has no occasion (a great advantage) to reverse the drawing or design, as is the case when a drawing is made on wood. The surface of a copper-plate is prepared with a thin coating or layer of plaster of Paris of uniform depth, through which the draughtsman etches with a point to the surface of the copper; he is enabled as he proceeds to observe the effect of every touch of the etching point. When the drawing or etching is completed, it forms a complete matrix or mould, and is cast in type metal, in a similar manner to the process of stereotype casting, and at once forms a block or plate, which must in every minute feature produce a perfect fair-simile of the original design of the artist, and from which at the type-press or steam-roller thousands of impressions can be worked in a few hours.

The patentees of this method have had the most flattering testimonials from a great number of artists and draughtsmen in London, but in the infancy of the invention it may be better to content ourselves by referring our readers to our own pages, where many specimens of gypsography have already appeared.

We cannot conclude this brief notice of this ingenious and useful invention without transcribing a portion of a letter we have before us, from the talented editor of the *Athenæum*. Mr. Page, a practical draughtsman and engraver on wood; he says, speaking with regard to the ease with which engravings may be produced by the gypsographic method, "The nearest type in the arts will soon find on the first or second trial the facilities with which his ideas may be brought before the public without intruding the effect, which in their mind's eye they would wish to produce, to the will and talent of the wood engraver, who may often unknowingly mistake the meaning of the artist, and completely foil the original idea."

In conclusion, from specimens which we have seen of maps, machinery, surveys, architectural elevations, plans, &c., executed by this process, we have no doubt of its complete success, and that in a comparatively short time it will be generally used for every description of illustration.

It will well repay the trouble of a visit to the office, in Raucecourt, Fleet-street, to inspect the specimens in this style of art, and to obtain instructions in the method of working on the plates. Many of our readers will find it a most interesting and valuable acquisition.

GRECIAN TEMPLES.

ACCORDING as we are to see pure buildings springing up around us, what can be more astonishing than the magnificent dimensions of the temples of ancient Greece? One of the largest of these edifices was the temple of Diana at Ephesus. It was 425 feet long by 220 broad; the columns were 60 feet in height. The temple of Jupiter at Agrigento, described by Diodorus Siculus, was 340 feet in length by 60 in width. The latter measurement, however, is generally admitted as a mistake in the text for 160, since the great temple of Selinus, the next in size, was 331 feet in length by 161 in breadth, and 60 feet of width, compared with the length, is an impossibility. The temple of Jupiter Olympus at Athens was 235 feet long, by 96 in breadth. That of the Parthenon, 229 by 102. The larger temple at Paestum, 155 feet 4 inches, by 78 feet 10. The temple at Segeste, 150 feet by 76 feet 8 inches. The temple of Syracuse, 172 by 74. That of Corinth 160 feet by 109. The temple of Apollo Epicurius at Phigaleia, 124 feet by 47. That of Juno at Agrigento, 124 feet by 54 feet 7. The smaller temple at Paestum, 107 feet by 47. The temple of Jupiter, at Egina, 96 feet by 42. The joint temple of Minerva Polias and Erectheus 74 feet long by 38 in width; the columns 23 feet high.